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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/725,544	12/03/2003	Chun-Yung Huang	3624-0143P	3190

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EXAMINER	
BLAU, STEPHEN LUTHER	
ART UNIT	**PAPER NUMBER**
3711	

DATE MAILED: 02/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/725,544	HUANG ET AL.	
	Examiner	Art Unit	
	Stephen L. Blau	3711	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 November 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9 and 12-16* is/are pending in the application.

4a) Of the above claim(s) *3,8 and 9* is/are withdrawn from consideration.

5)☒ Claim(s) *14* is/are allowed.

6)☒ Claim(s) *1,2,4-7 and 12-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. The changes to claims 1 and 10 are agreed with and the objections are removed.

2. Claim 14 is objected to due to the word "think" in line 2 not making sense.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1, 4-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shira in view of Isobe.

Shira discloses a first portion (Ref. Nos. 2, 6) made of a first metal in the form of stainless steel (Col. 4, Lns. 7-10) including an abutting portion (Fig. 1), a second portion (Ref. No. 4) being made of a second metal in the form of titanium (Col. 3, Lns. 49-51) including an abutting portion (Fig. 1), a thin intermediate layer in the form of one of the methods of forming an intermediate layer is through plating (Fig. 1, Col. 5, Lns. 1-2) of a third metal in the form of silver, nickel and other metals (Col. 4, Lns. 64-67) material

positioned between an abutting portion of a first portion and an abutting portion of a second portion in the form of a filler metals (Col. 4, Lns. 64-67), friction welding (Col. 4, Lns. 1-4), an intermediate layer being powdery (Col. 5, Lns. 1-2), and an intermediate layer closely connecting a butting portion of a first portion with the abutting portion of a second portion (Fig. 1, Col. 1, Ln. 67 through Col. 5, Lns. 1-2). Shira does not disclose the compatibility between the first, second and third metals that but clearly an artisan skilled in the art of placing two different metals together using friction welding and an filler metal would have selected a suitable filler metal in which a metallurgical compatibility between a first metal and a third metal being better than that between a first metal and a second metal, and a metallurgical compatibility between a second metal and a third metal being better than that between a first metal and a second metal are included.

Shira lacks an intermediate layer and the abutting portion of the first portion being joined together by welding friction, the intermediate layer and the abutting portion of the second portion being joined together by welding friction, a metallurgical compatibility between a first metal and a third metal being better than that between a first metal and a second metal, and a metallurgical compatibility between a second metal and a third metal being better than that between a first metal and a second metal.

Isobe discloses a process of friction welding titanium to an intermediate layer containing nickel and friction welding the intermediate layer containing nickel to steel (Abstract, Col. 4, Lns. 1-13). In view of the patent of Isobe it would have been obvious to modify the golf head of Shira to have an intermediate layer and the abutting portion of

the first portion being joined together by welding friction, and the intermediate layer and the abutting portion of the second portion being joined together by welding friction in order to use a known method of friction welding a joint together using a filler material.

It would have obvious to modify the head of Shira to have a metallurgical compatibility between a first metal and a third metal being better than that between a first metal and a second metal, and a metallurgical compatibility between a second metal and a third metal being better than that between a first metal and a second metal in order to have a joint stronger by using a filler metal.

5. Claims 2 and 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shira in view of Isobe as applied to claims 1, and 4-7 above, and further in view of Takeda (5,769,307).

Shira discloses the intermediate layer having the same cross-section as the abutting surfaces in the form of the method of plating the abutting surfaces (Col. 5, Lns. 1-2). Clearly the intermediate layer would have the same thickness in addition.

Shira lacks an abutting portion of a first portion being formed on an extension extending from a heel of a body and an abutting portion of the second portion being formed on a hosel, an intermediate layer having a generally circular disc shape, and a club has a shaft with a longitudinal axis wherein the intermediate layer is intersected by the longitudinal axis of the shaft.

Takeda discloses components of a golf head (Figs. 9-10) friction welded together (Col. 5, Lns. 50-62), an abutting portion of a first portion of steel being formed on an

extension extending from a heel of a body and an abutting portion of the second portion of titanium being formed on a hosel (Col. 4, Lns. 65 through Col. 5, Lns. 5), the abutting surfaces being circular (Figs. 9-10, Col. 4, Lns. 54-64) and a club has a shaft with a longitudinal axis which intersects the abutting surfaces of a first portion and a second portion (Figs. 9-10). Isobe discloses an intermediate layer for an engine value having the same thickness throughout the cross-section of the valve (Fig. 3). In view of the patent of Takeda it would have been obvious to modify the head of Shira to have an abutting portion of a first portion being formed on an extension extending from a heel of a body and an abutting portion of the second portion being formed on a hosel in order to utilize the method of welding of Shira with the body and hosel joint of Takeda. In view of the patents of Takeda and Isobe it would have been obvious to modify the head of Shira to have an intermediate layer having a generally circular disc shape, and a club has a shaft with a longitudinal axis wherein the intermediate layer is intersected by the longitudinal axis of the shaft in order to have a continuous outer surface between a hosel and an extension form a heel.

6. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shira in view of Isobe as applied to claims 1, and 4-7 above, and further in view of 2003-25075.

Shira lacks each of the abutting portions including a surface roughness smaller than Ra 25 um.

2003-25075 discloses surface roughness of metal components friction welded together have a surface of roughness being Ra 10 or less (English, Basic Abstract). 2003-25075 does not state the specific units but the metric system units are being used in the reference of 2003-25075 and one skilled in the art would use a suitable unit in which micro-meters is included. In view of the reference of 2003-25075 it would have been obvious to modify the head of Shira to have each of the abutting portions including a surface roughness smaller than Ra 25 um in order to utilize a known surface roughness used when friction welding is made on the surface.

Response to Arguments

7. The argument that it is improper to use the reference of Shira since Shira does not disclose an intermediate thin layer and abutting portions of a second portion being joined together by friction welding is disagreed with. Shira clearly allows friction welding to be one of the methods of connecting components of a golf club head. Shira also discloses using filler between the components that are connected. Isobe was used to disclose that it is known to use a filler material for an intermediate layer when friction welding components together of different metals. The argument that the reference of Isobe is improper due to Isobe not disclosing a thin layer is disagreed with. Isobe discloses as one component being an engine valve (Col. 3, Lns. 65-68). Clearly engine valves can have diameters smaller than a hosel. If figure 3 of Isobe is an engine valve (Col. 3, Lns. 37-47) for say a car than the intermediate layer is thin. Shira discloses an

intermediate layer where the layer is thin in the method of plating abutting surfaces (Col. 5, Lns. 1-2). The argument that the reference of Isobe is improper due to Isobe being analogous art is disagreed with. Isobe discloses friction welding between metal components which is exactly what Shira is concerned with. One skilled in the art of friction welding metallic components together as taught by Isobe would be an obvious selection for friction welding the metallic parts of Shira together since both deal with metals and both deal with friction welding. The argument that Shira and Takeda are improper to combine with Isobe since Isobe discloses a thicker intermediate layer is disagreed with. Isobe discloses a thin layer in respect to the components which are being connected (Fig. 1). Never-the-less Shira clearly discloses a thin intermediate layer in the method of a filler being plated on the surfaces (Col. 5, Lns. 1-2). Clearly if powder it used small thicknesses would also be selected. Nothing leads one to believe a plate layer would be thin but filler of powder would be thick. Isobe was used to show that it is known to have fillers layers for the friction welding method of attaching metal components together. The argument that it is improper to use Shira since Shira would not use a circular disc shape intermediate layer is disagreed with. Shira was not used to show this but Takeda and Isobe were.

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steve Blau whose telephone number is (703) 308-2712. The examiner is available Monday through Friday from 8 a.m. to 4:30 p.m.. If the examiner is unavailable you can contact his supervisor Greg Vidovich whose telephone number is (703) 308-1513. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0858. (TC 3700 Official Fax 703-872-9306)

slb/ 31 January 2005

STEPHEN BLAU
PRIMARY EXAMINER